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[54] GOLF CLUB AND PLUMBING DEVICE THEREOF

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[51] **Int. Cl.**[5] **A63B 69/36**; A63B 53/00; G01C 9/14; G01C 9/28

[52] **U.S. Cl.** ..... **273/162 B**; 273/165; 273/77 R; 273/81 C; 273/32 H; 33/334; 33/365; 33/397

[58] **Field of Search** ..... 273/32 R, 32 B, 32 H, 273/162 R, 162 B, 81.4, 77 R, 77 A, 165, 81.2, 81 C, 81 D; 33/263, 286, 313, 334, 354, 365, 373, 397

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[57] **ABSTRACT**

A device (**10**) for facilitating use of the shaft (**28**) of a golf club (**30**) for plumbing is disclosed. The device comprises two concentric members (**12, 16**), one freely movable inside the other, with the inner member (**16**) seated about the shaft (**28**) of the club (**30**). Plumbing is achieved by gripping the outer member (**12**) between two or more fingers, whereupon the free movement of the inner member (**16**) relative to the outer member (**12**) permits the club (**30**) to assume a truly vertical orientation with the head (**44**) of the club (**30**) serving as a plumb weight. The shaft (**28**) may then be used to judge the relief of the putting surface in the usual manner, but with the assurance that the club (**30**) is in a true vertical orientation.

20 Claims, 1 Drawing Sheet

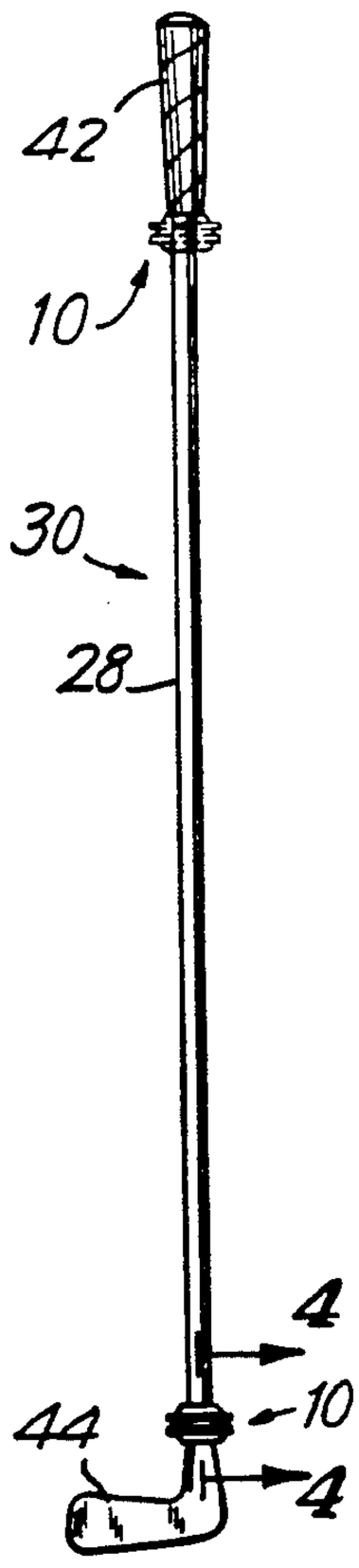


FIG. 1

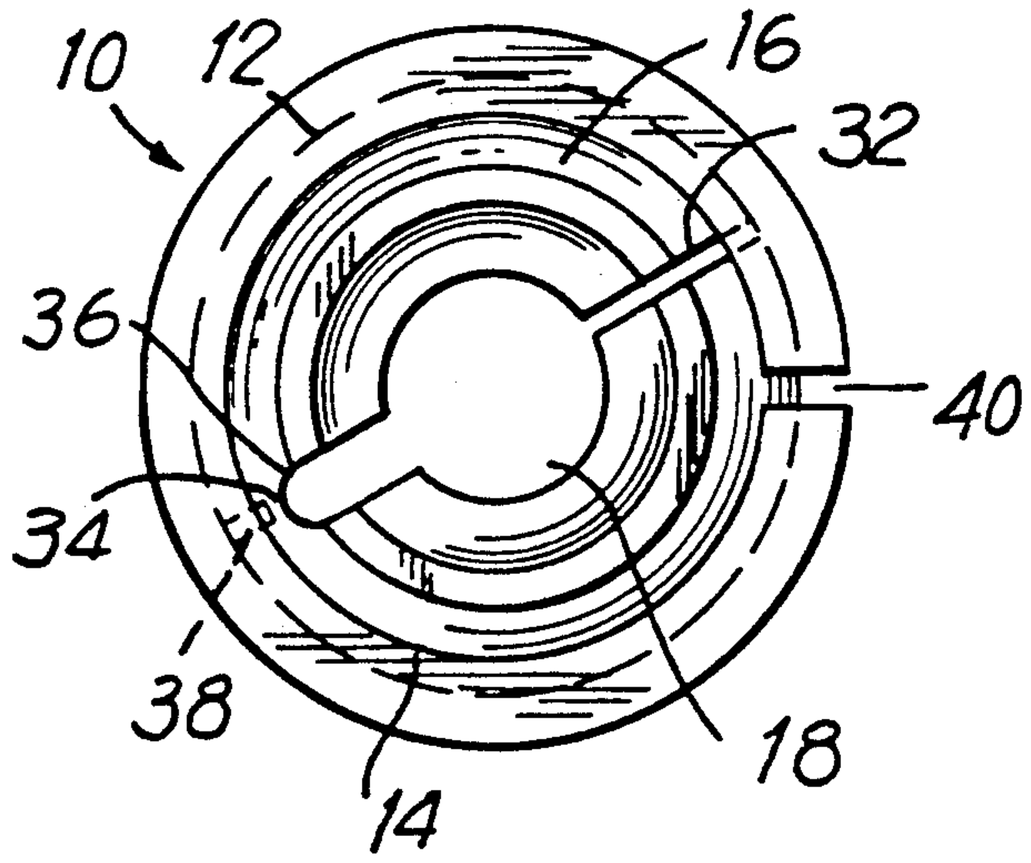


FIG. 3

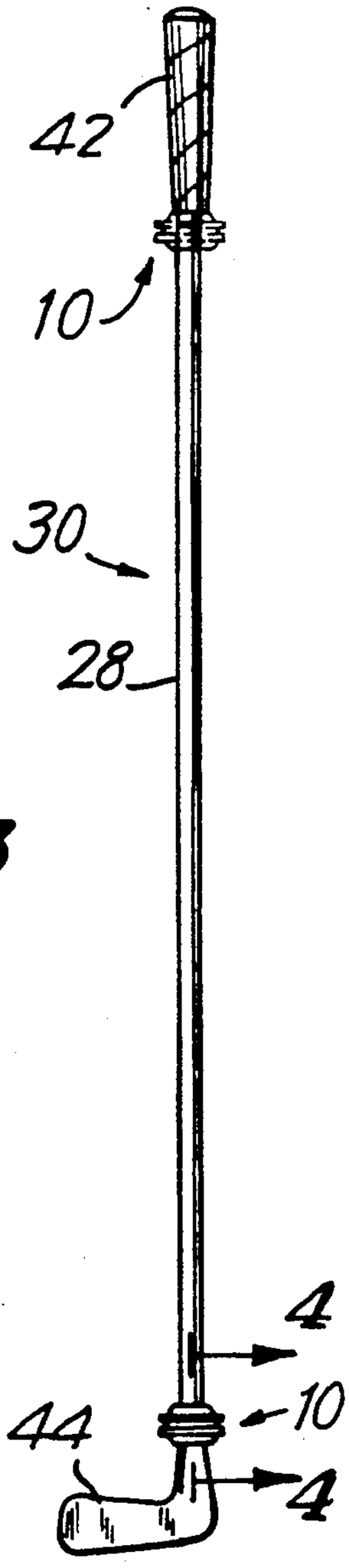
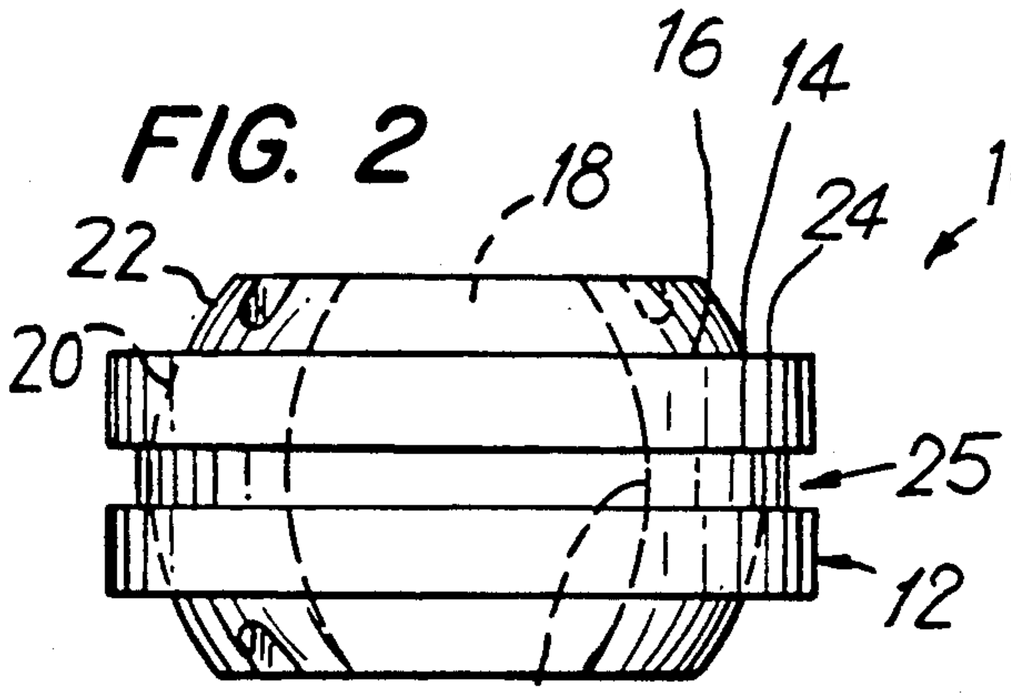


FIG. 2



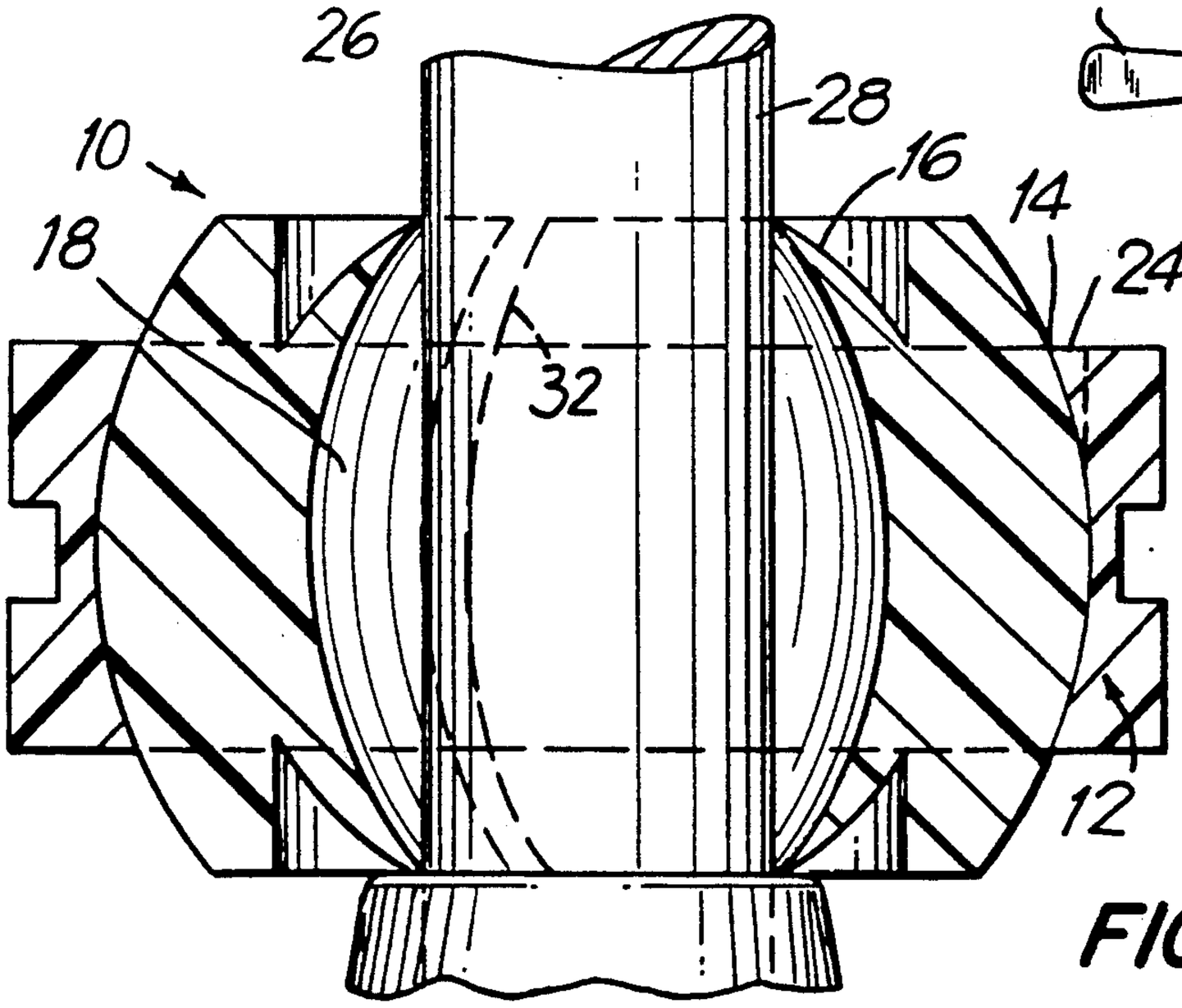


FIG. 4

GOLF CLUB AND PLUMBING DEVICE THEREOF

BACKGROUND OF THE INVENTION

1. Technical Field

This invention relates to a device used in golf, and more particularly to a device which facilitates use of a putter as a "plumb line" for aligning a putt.

2. Background Art

In the game of golf, putting the ball while it is on the green is challenging, particularly where the putting green is not flat. For accurate putting, an uneven relief requires an exact evaluation of the curvature of the surface of the putting green over which the ball will travel en route to the hole. Without such an evaluation, the player may choose the wrong direction to putt the ball, thereby adding strokes to his/her final score.

To evaluate the relief of the putting green, players typically use their golf clubs as a kind of "plumb line". This is accomplished by gently holding the handle of the golf club between the thumb and forefinger such that the club has sufficient freedom of movement to assume a vertical position under the influence of gravity, with the head of the club acting as the weight for the plumb line. This technique, however, is not perfect. No matter how gently the putter is held, freedom of movement of the club's shaft is invariably somewhat restricted by the user's fingers making a truly vertical orientation unlikely. And in the absence of a truly vertical orientation, assessment of the relief of the surface of the putting green is likely to be in error.

It is accordingly an object of the invention to provide a device for facilitating evaluation of the relief of a putting surface.

It is a further object of the invention to provide such a device which may be used in combination with a conventional golf club, typically a putter.

It is yet a further object of the invention to provide a device of the aforementioned type which is easy to use and inexpensive.

It is still a further object of the invention to provide a device of the aforementioned type which in use is fitted on a golf club and which may be removed therefrom as desired.

DISCLOSURE OF THE INVENTION

Briefly stated, the present invention is a device which facilitates use of the shaft of a golf club for plumbing, the device comprising two concentric members, one freely movable inside the other in the manner of gimbals, with the inner member seated about the shaft of the club. Plumbing is achieved by gripping the outer member between two or more fingers, whereupon the free movement of the inner member permits the club to assume a truly vertical orientation with the head of the club serving as a plumb weight. The shaft may then be used to judge the relief of the putting surface in the usual manner, but with the assurance that the club is in a true vertical orientation.

In a broad sense, the device of the invention comprises an inner member having an internal bore dimensioned to be seated about the shaft of a golf club and an outer member having an internal opening, the inner member being seated in the opening and freely movable relative to the outer member whereby when the inner member is seated on the shaft and the outer member is gripped by a user, the free movement of the inner member relative to the outer member permits the shaft to assume a vertical position for facilitating use of the club as a plumb line.

In another aspect, the invention comprises an improved golf club incorporating a device to facilitate use of the club for plumbing, the device comprising an inner member having an internal bore seated about the shaft of the golf club and an outer member having an internal opening, the inner member being seated in the opening and freely movable relative to the outer member whereby when the outer member is gripped by a user, the free movement of the inner member relative to the outer member permits the shaft to assume a vertical position for facilitating use of the club as a plumb line.

According to a preferred feature of the invention, the mating surfaces of the inner and outer members are curved to accommodate free rotation of the inner member relative to the outer member.

The above as well as further features and advantages of the present invention will be more fully apparent from the following detailed description read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top plan view of a preferred embodiment of the device of the invention.

FIG. **2** is a side view thereof; and

FIG. **3** is a perspective view of a golf club fitted with the preferred device.

FIG. **4** is a cross-sectional view taken on the line **4—4** of FIG. **3**.

BEST MODE FOR CARRYING OUT THE INVENTION

Referring now to the drawings, a device for plumbing in accordance with the present invention is generally designated at **10**. As shown, the device **10** includes an outer generally ring-shaped member **12** defining an opening **14** and an inner generally toroidally-shaped member **16** defining a bore **18**.

As best seen in FIGS. **1**, **2** and **4**, the internal wall **20** defining the opening **14** in the outer member **12** has a concave shape for receiving the generally convex outer wall **22** of the inner member **16**. When the internal member **16** is received in the opening **14** of the outer member **12**, the clearance between the walls **20** and **22** is sufficient to accommodate free rotational movement of the inner member **16** relative to the outer member **12**. In the drawings, the clearance fit between the concave wall **20** of the outer member **12** and the convex wall **22** of the inner member **16** is designated by the space **24** which is exaggerated in FIG. **2** for purposes of clarity. As seen in the drawings, the wall **26** defining the bore **18** in the inner member **16** is dimensioned to fit about the shaft **28** of a golf club **30** as will be more fully explained below.

As best seen in FIGS. **1**, **2** and **3**, the inner member **16**, which is preferably comprised of low-friction plastic, such as Teflon ®, comprises a through slit **32** and a diametrically opposed living hinge **34**, the latter comprising a narrowed section of the inner member defined between a slot **36** extending from the wall **26** and an aligned groove **38** in the outer wall **22**. It will be apparent to those of ordinary skill in the art that this arrangement permits the two halves of the inner member **16** to be pivoted apart about the living hinge **34** for widening the slit **32**. This, in turn, permits the inner member **16** to be fitted about the shaft **28** of a putter **30** by forcing the

shaft **28** through the widened slit **32** until the shaft seats in the bore **18**. As also best shown in FIG. **1**, the outer member **12**, which may be comprised of plastic, such as PVC, includes a through slit **40**. This slit **40** allows the opening **14** in the outer member **12** to be sufficiently enlarged so that it may be fitted about the inner member **16** as will be more fully explained below. Outer member **12** also has an external, annular groove **25** shown in FIGS. **2** and **3** to receive a rubber band or spring for reasons also explained below.

To assemble the device **10** on the shaft **28** of the putter **30**, the two halves of the inner member **16** are pivoted apart about hinge **34** until the slit **32** is sufficiently widened to fit about the shaft **28** for seating the shaft in the bore **18** whereupon the resiliency of the living hinge **34** closes the two halves of the inner member **16** about the shaft. Next, the outer member **12** is forced via slit **40** about the shaft **28** at a lower portion thereof, preferably below the inner member **16**. The outer member **12** may then be slid up the shaft **28** into abutting relation with the inner member **16**, whereupon continued upward pressure on the outer member **12** widens the opening **14**, such widening being accommodated by the slit **40**, until the outer member **12** snaps into position about the inner member **16**. In this regard, it will be noted that the diameter of the convex wall **22** of the inner member **16** at its widest point is greater than the diameter of the opening **14** at either end thereof such that once the inner member **16** is seated in the outer member **12** it is retained therein. With the outer member **12** in place about the inner member **16**, the clearance **24** between the inner and outer members accommodates free rotational movement therebetween. A rubberband or spring may be seated in the groove **25** in outer member **12** to insure that the amount of friction between the inner and outer members remains constant. Alternatively, some other form of fastening device may be employed to keep the slit **40** in outer member **12** closed.

The device **10** may seat at the very bottom of the shaft **28** which, as best shown in FIG. **3**, is usually tapered from the gripping end **42** to the putting head **44** or, alternatively, may be retained by a friction fit or adhesion at the upper end of shaft **28** below grip **42**. In either event, when it is desired to use the shaft **28** of the putter **30** as a plumb line for judging the relief of a putting surface, the device **10** will typically be positioned at the top of the shaft below the grip. If the device **10** is seated at the bottom of shaft **28**, this is easily accomplished by sliding device **10** up the shaft **28** until the taper of the shaft blocks further upward sliding movement, i.e., when the diameter of the shaft **28** equals the diameter of the bore **18**. If the taper of the shaft is insufficient to block further upward sliding movement, such upward movement will, in any event, be blocked by the handle **42** of the club. The user then grips the outer member **12** between two or more fingers without, however, touching either the inner member **16** or the putter **30** which are thereby free to move relative thereto. Such relative movement between the outer member **12** on the one hand and the inner member **16** and putter **30** on the other, much in the manner of gimbals, permits the putter **30** to assume a truly vertical orientation under the influence of gravity, with the head **44** of the club **30** serving as a plumb weight. At this point, the shaft **28** is used in the usual fashion as a plumb line for judging the relief of the putting green, but with the assurance that the club shaft **28** is in a truly vertical orientation. Of course, when plumbing, the head **44** should be pointed directly toward or away from the hole. Otherwise, the tilt of the club relative to true vertical resulting from the asymmetric weighting of the club head will affect the accuracy of the resulting plumb.

While I have herein shown and described a preferred embodiment of the present invention, those of ordinary skill in the art will recognize that various changes and modifications may be made therein without departing from the spirit and scope thereof. For example, while the preferred device **10** is comprised of plastic to accommodate removal of the device **10** from club **30** as desired, it could be made of, for example, metal in which event the device could be permanently fitted on the club. Accordingly, the above description should be construed as illustrative, and not in a limiting sense, the scope of the invention being defined by the following claims:

What is claimed is:

1. A device for use in golf comprising:

an inner member having an internal bore dimensioned to be seated about the shaft of a golf club; and

an outer member having an internal opening, said inner member being seated in said opening and freely movable relative to the outer member whereby when the inner member is seated on the shaft and the outer member is gripped by a user, the free movement of the inner member relative to the outer member permits the shaft to assume a vertical position for facilitating use of said club as a plumb line.

2. The device of claim **1**, wherein the wall of said outer member defining said internal opening is generally concave and the outer wall of said inner member received in said opening is generally convex whereby the cooperation of said concave and convex walls retains said inner member in said opening while permitting free movement of said inner member relative to said outer member.

3. The device of claim **2**, wherein said inner member is generally toroidally-shaped and said bore is an axial bore, and wherein said outer member is generally ring-shaped and said opening is an axial opening.

4. The device of claim **2**, wherein said outer member is resilient and has a first through slit therein for accommodating widening of said opening for receiving said inner member.

5. The device of claim **4**, wherein said inner member is resilient and has a second through slit therein which may be widened sufficiently to accommodate insertion of said shaft into said bore through said second slit.

6. The device of claim **5**, wherein said inner member has a living hinge opposite said second through slit for accommodating widening thereof.

7. The device of claim **5**, wherein said inner and outer members are made of plastic.

8. The device of claim **7**, wherein said inner member comprises a low friction plastic.

9. The device of claim **7**, wherein said outer member comprises PVC.

10. The device of claim **2**, wherein said device is intended for use with a club having a tapered shaft narrower at its club head than its handle, and wherein said bore is dimensioned for a clearance fit about said shaft near said club head and a friction fit about said shaft near said handle whereby when said device is in

use it is near said handle and retained against further upward movement by said friction fit.

11. In a golf club, the improvement comprising a device to facilitate use of said club for plumbing, comprising:

an inner member having an internal bore seated about the shaft of said golf club; and

an outer member having an internal opening, said inner member being seated in said opening and freely movable relative to the outer member, whereby when the outer member is gripped by a user, the free movement of the inner member relative to the outer member permits the shaft to assume a vertical position for facilitating use of said club as a plumb line.

12. The device of claim **11**, wherein the wall of said outer member defining said internal opening is generally concave and the outer wall of said inner member received in said opening is generally convex whereby the cooperation of said concave and convex walls retains said inner member in said opening while permitting free movement of said inner member relative to said outer member.

13. The device of claim **12**, wherein said inner member is generally toroidally-shaped and said bore is an axial bore, and wherein said outer member is generally ring-shaped and said opening is an axial opening.

14. The device of claim **12**, wherein said outer member is resilient and has a first through slit therein for accommodating widening of said axial opening for receiving said inner member.

15. The device of claim **14**, wherein said inner member is resilient and has a second through slit therein which may be widened sufficiently to accommodate insertion of said shaft into said bore through said second slit.

16. The device of claim **15**, wherein said inner member has a living hinge opposite said second through slit for accommodating widening thereof.

17. The device of claim **15**, wherein said inner and outer members are made of plastic.

18. The device of claim **17**, wherein said inner member comprises a low friction plastic.

19. The device of claim **17**, wherein said outer member comprises PVC.

20. The device of claim **12**, wherein said golf club has a tapered shaft narrower at its club head than its handle, and wherein said bore is dimensioned for a clearance fit about said shaft near said club head and a friction fit about said shaft near said handle, whereby when said device is in use it is near said handle and retained against further upward movement by said friction fit.

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